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CLAIMS

1. A device, characterised in that it
5 contains a sample chamber and at least two coils, said
two coils surrounding said sample chamber and said sample
chamber having at least one opening for introduction of
a sample or a sample container holding a sample.

2. A device as claimed in claim 1, character-
10 terised in that each of said coils, when filled
with air, has an inductance in the range of 0.01 to
100 μH .

3. A device as claimed in claim 1 or 2, character-
acterised in that said sample chamber has a
15 chamber volume in the range of 0.1 to 5000 μl .

4. A device as claimed in any one of claims 1-3,
characterised in that one of the coils is
placed so as to be in thermal contact by being physically
connected to the material which constitutes the sample
20 chamber, but without surrounding the cavity of the sample
chamber.

5. A device as claimed in any one of claims 1-4,
characterised in that it is provided with an
electronic circuit which measures the difference in
25 inductance between the two coils.

6. A device as claimed in any one of claims 1-5,
characterised in that the material of which
the sample chamber is made is a polymer, such as Delrin,
POM, polyvinyl chloride, Teflon, polyamide, polyacetal,
30 polyethylene, polycarbonate, polystyrene, polypropylene,
wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

7. A device as claimed in any one of claims 1-6,
characterised in that it is provided with an
electronic circuit whose output signal is proportional to
35 the difference in inductance between said coils and to
the relative magnetic permeability of the sample material

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placed in one of the coils, which is in the range of
 $0.0000001 < \mu_r < 10$.

8. A device as claimed in claim 7, c h a r a c -
t e r i s e d . in that said electronic circuit is formed
5 such that said coils are part of an alternating current
bridge.

9. A method in which the device as claimed in any
one of claims 1-8 is used for detection of magnetic per-
meability μ or, alternatively, relative magnetic perme-
10 ability μ_r or, alternatively, relative magnetic suscep-
tibility $(\mu_r - 1)$ of various chemical substances.

10. A method in which the device as claimed in any
one of claims 1-9, by interaction with magnetic markers,
is used for detection of chemical substances with $\mu_r = 1$,
15 exemplified by proteins, hormones, complement factors,
bacteria, cells, viruses, fungi, yeast, spores, phages,
cells, cell organelles, DNA, RNA.